CMPT 376W Work Shop a Paper

Introduction

A Web application that has AI generated feedback service to help user to prepare for their upcoming interview.

- Motivation
  - To improve student's interview skill to help them prepare their Zoom interview
- Task Description
  - A web application using A.I. generated interview feedback to help improve student's interview skill.
- Objective
  - The application will evaluate user's body language, facial expression, and

Problem Analysis

- User requirements
  - User Groups (optional)
  - User's Guide
    - The website will first provide user with a commonly asked interview question.
    - Once the user got the question, they can click on record button to record their interview.
    - Once the user has completed the interview, the website will later analyze the interview.
      - It will analyze user's body language and voice, then give a score from 0 to 100.
        - Eye visibility
        - Sentiments (feeling)
        - Smiling
        - Looking at the camera
      - Then it will take the average of all the quality listed above to present to the user
    - As the website present the result
  - Existing Software Solutions (Related Work) optional
- Usability Requirements optional
  - Common Requirements optional
    - For normal user
  - GUI optional
    - Figma
      - Use Figma to draft out the design of the User Interface

    - CLI (Command-line) optional
        - React CLI
            - Using React framework to create our frontend
            - React is one of the most popular frontend frameworks that is written in JavaScript, and it's been widely use in the tech industry.
            - It will be really useful for my team to learn this framework
    - API optional
        - Google Cloud API
            - Provide pre-trained machine learning model that can help analyze user's interview more efficient.
                - Normally, it is a time-consuming process just to train a machine learning model.
                - Models include:
                    - Facial recognition
                        - Help detects
                            - Smiling
                            - Eyes looking at the camera
- Hardware & Software Requirements to Run Software optional
    - Operating Systems optional
        - Since it's a web application, the user has to make sure that they have access to the internet and choose their preferred web browser (Chrome, Firefox, and etc) to find the website.
    - Programming Language and Libraries (dependencies) optional
        - Python, JavaScript, JSX (JavaScript XML), React, Google Cloud and Flask

Design

- Architecture Overview (provide diagram)
    - We have React as frontend, and Flask (Python framework) as backend
    - It will first record the student's interview
    - Once the user completed the interview, the recording will be saved as a video file (.mp4), and it will send to our backend
    - As the backend receive the video recording, it will use an already trained machine learning model provide by Google Cloud API to analyze user's body language and voice.
    - Once the backend finished analyzing the recorded interview, it will send the score back to frontend, and it will present the score to the user.
- Core library optional
    - Flask
    - Google cloud
    - React

Installation

- Installing from Software Code optional
  - Unix, Linux, MacOSX optional
  - Windows (32 bits) optional
  - For
- Installing Binaries
- Install dependencies
  - Installing NPM (Node Package Installer)
    - NPM is used for installing dependencies for React
    - Download NodeJS installer on ….
      - Make sure to click on LTS (Long Term Support) version because it provides performance stability
    - Depending on the operating system of the user's computer, user will have to find the installer that is suitable for their computer. (image provided NodeInstall.png)
    -
  - Installing React
    - Install NodeJS and NPM
    - Go to the site to install NodeJS
    -
  - Installing Python
    - Access to pip
    - Install Flask
    -
- Our software does not require user to install in their computer. Since it's a web application, it is available online for everyone with internet access.

Project Management

- Software License optional
- Documentation optional
  - Source Code Documentation
  - Technical Documentation & User Manual (optional)
- Software Development
  - Programming Language(s) Used
    - Python is used for creating backend with Flask frameworks
    - JavaScript for creating frontend logic in React frameworks
    - JSX (JavaScript XML) allows developer to
  - Development Platform
    - Visual Studio Code (VS Code)
      - Visual Studio Code can be installed in any operating systems, and it supports a variety of programming languages and web frameworks

        - Terminal (built-in feature in VS Code)
    - Choosing a GUI Toolkit optional
    - Version Control System
        - GIT
    - Generating Binaries/Executable optional
- Project Organization
    - Process Model
        - Agile development
    - Project Responsibilities and Deliverables
        - Responsibilities
            - Frontend developer will first create a prototype of the design on Figma and later implement the design in React
            - Backend developer will develop server that can integrate with Google Cloud API to allow the backend to analyze recorded interview from the user.
            - Once both frontend and backend are developed, then another developer will integrate both frontend and backend to make sure that data can transfer smoothly from backend to frontend.
        - Deliverables
            - This application will be available and accessible to in any browsers that the user preferred.

- Milestones & Schedule
    - February 12 Recruit people to create a group
    - Feb 19 Pick a topic
    - March 5 Develop backend
    - March 9 Integrate backend with Google Cloud API
    - March 10 Complete unit test for backend
    - March 19 Design and implement frontend
    - March 23 Complete unit test for frontend
    - March 26 Integrate both backend and frontend together
    - March 28 Finalize application and write more test
    - April 5 Project deadline
- Management
    - Risk Management
        - Everyone is familiar with Python
    - Benefits
        - Everyone is familiar with Python
        - Two members of the team have experience working with JavaScript
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    - Weakness
        - No one is experience with React, Google API

- Not everyone is familiar with Javascript